

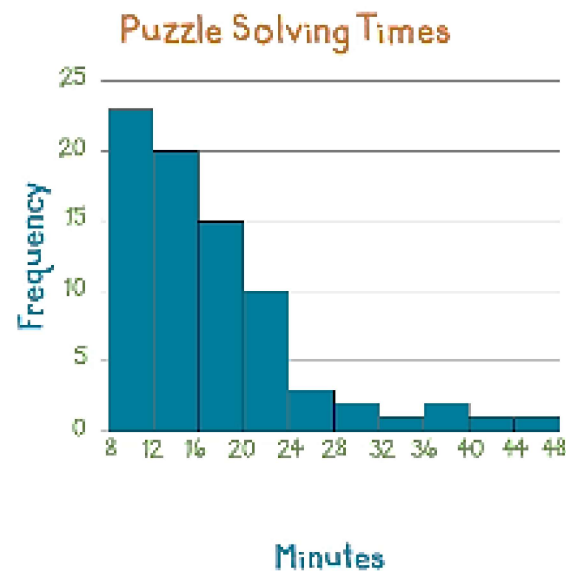
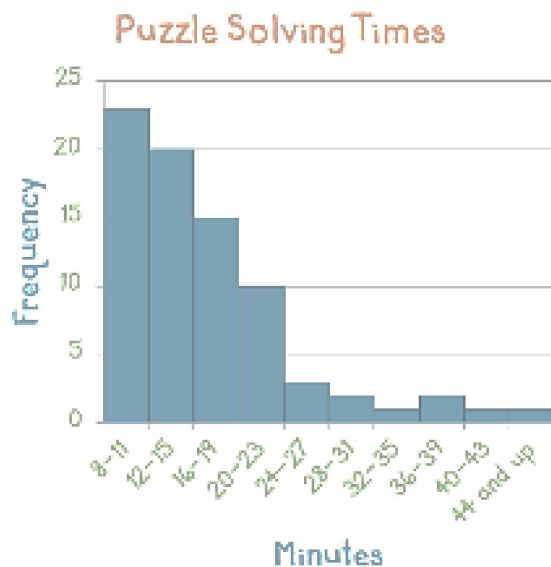
## Answers

## Expert Group 1 – Histograms

Watch LearnZillion [https://learnzillion.com/lesson\\_plans/7244-create-a-histogram](https://learnzillion.com/lesson_plans/7244-create-a-histogram).

Answer the questions below about histograms.

1. Why is a label of 8 – 11 not the same as 12 on a histogram as shown in the picture below? When do you want to use a label such as 8 – 11?



The label 8 - 11 makes it look like there are no numbers between 11 and 12. A time of 11.25 minutes would not be in either interval 8 - 11 or 12 - 15. Only use this if there is no way a data point can be between intervals. The 12 on the second histogram means all times  $x$ , where  $12 \leq x < 16$ .

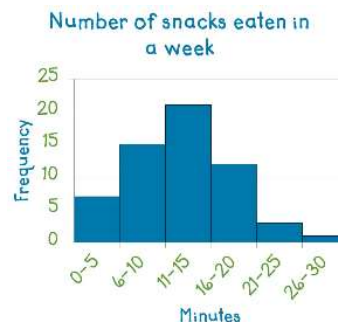
2. Name two differences between a bar graph and a histogram?

A bar graph is usually used to display categorical data and has space between the bars. Histograms are usually made for continuous data and the bars touch unless there is a gap in the data.



3. What common mistake is being shown in the histogram at the right?

Since 0 is part of the first bin, that bin has 5 as its range where the next bin only has 4 as its range.



4. What are the steps to create a histogram?

1. Organize the data with a frequency table or stem-and-leaf plot.
2. Choose the size of the bins. The number of bins should be between 5 and 10 for most of our data sets.
3. Divide the data into intervals based on how many bins you want.
4. Count how many data points are in each interval and graph that number with a bar.
5. Bars touch unless there is a gap in the data.

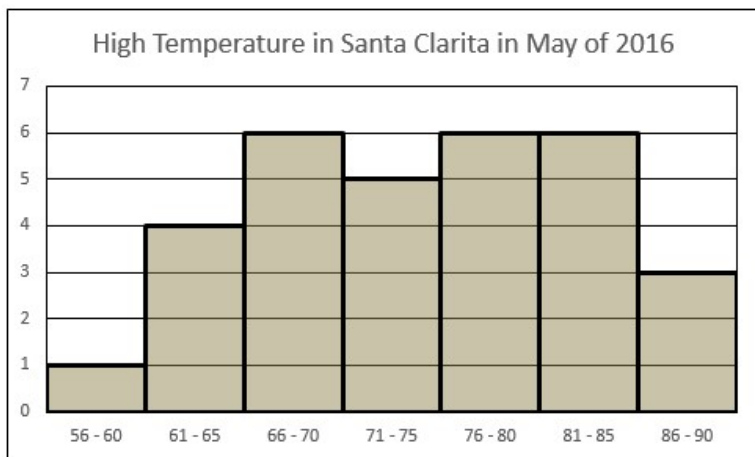
5. Why is having too few bins a problem in a histogram? Can you have too many bins? Explain.

Too few bins it is hard to see the data because the data is too clumped together.

Too many bins becomes cumbersome to create. The bins are also too narrow.

6. Create a histogram of the following data set.

Graph intervals may vary.



High Temperatures in Santa Clarita in May of 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
May 1 74°	May 2 80°	May 3 83°	May 4 78°	May 5 60°	May 6 62°	May 7 62°
May 8 66°	May 9 68°	May 10 72°	May 11 83°	May 12 90°	May 13 84°	May 14 78°
May 15 70°	May 16 75°	May 17 81°	May 18 86°	May 19 76°	May 20 66°	May 21 63°
May 22 71°	May 23 67°	May 24 65°	May 25 66°	May 26 76°	May 27 81°	May 28 80°
May 29 73°	May 30 81°	May 31 86°				

